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EXAMINER	
DEAN, RAYMOND S	

ART UNIT	PAPER NUMBER
2684	

DATE MAILED: 04/07/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)
	10/026,944	HOTTINEN, ARI
	Examiner	Art Unit
	Raymond S Dean	2684

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on 02 November 2004.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1 - 11, 14 - 32, and 34 - 41* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1 - 11, 14 - 32, and 34 - 41* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on 02 November 2004 is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Response to Arguments

1. Applicant's arguments with respect to claims 1 - 41 have been considered but are not persuasive. Examiner, respectfully disagrees with applicants' assertion that Muller does not teach estimating the probability of correct frames for the received signal on the basis of soft decisions provided by the decoder. The Frame Error Rate (FER) can follow standard kinds of FER measurements such as CRC calculations and Viterbi decoding, which provides soft decisions (See Column 4 lines 50 – 51, Column 5 lines 26 – 29).

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

3. Claims 1 – 10, 12, 18, 22 – 31, 34, and 37 - 38 are rejected under 35 U.S.C. 102(e) as being anticipated by Muller (US 6,490,461).

Regarding Claim 1, Muller teaches a method for implementing power control on a connection between two transceivers, the method comprising receiving frame-structured

signal sent from the first transceiver using the second transceiver (Column 5 lines 1 – 4, there is a measurement of the FER thus there will be a frame-structured signal), decoding the received signal in a decoder of the second transceiver, the decoder providing a soft decision estimate concerning the reliability of the signal in the output thereof (Figure 2, Column 1 lines 66 – 67, Column 2 lines 23 – 28, Column 4 lines 56 – 60, Column 4 lines 50 – 51, the data processing and control unit decodes the signal received at the base station thus there will be inherent decoding circuitry in said data processing and control unit, the reliability of the signal is measured in E sub b/ I sub o), estimating the probability of correct frames for the received signal on the basis of soft decisions provided by the decoder (Column 5 lines 5 – 8, lines 26 – 29), comparing the estimated probability or the parameter modeling the probability to a particular given threshold value (Column 4 lines 56 – 67, Column 5 lines 14 - 20), adjusting the transmission power of the first transceiver in the second transceiver by signaling power control information to the first transceiver so that the estimated probability is as close as possible to the given probability, wherein the power control information is calculated on the basis of the estimated probability (Figure 5, Column 4 lines 56 – 67, Column 5 lines 14 – 20).

Regarding Claim 2, Muller teaches a method for implementing power control on a connection between two transceivers, the method comprising receiving frame-structured signal sent from the first transceiver using the second transceiver (Column 5 lines 1 – 4, there is a measurement of the FER thus there will be a frame-structured signal), decoding the received signal in a decoder of the second transceiver, the decoder

providing a soft decision estimate concerning the reliability of the signal in the output thereof (Figure 2, Column 1 lines 66 – 67, Column 2 lines 23 – 28, Column 4 lines 56 – 60, Column 4 lines 50 – 51, the data processing and control unit decodes the signal received at the base station thus there will be inherent decoding circuitry in said data processing and control unit, the reliability of the signal is measured in E sub b/ I sub o), estimating the probability of correct frames for the received signal on the basis of soft decisions provided by the decoder (Column 5 lines 5 – 8, lines 26 – 29), comparing the estimated probability or the parameter modeling the reliability to a particular given threshold value (Column 4 lines 56 – 67, Column 5 lines 14 – 20), adjusting the transmission power of the first transceiver in the second transceiver by signaling power control information to the first transceiver so that the estimated probability is as close as possible to the given probability (Figure 5, Column 4 lines 56 – 67, Column 5 lines 14 – 20), wherein an estimate of at least one probability measure distribution is generated using the probability measures of several received frames, and the power control information is calculated on the basis of the estimated probability (Column 4 lines 56 – 67, Column 5 lines 14 – 20).

Regarding Claim 3, Muller teaches all of the claimed limitations recited in Claims 1 or 2. Muller further teaches wherein the given threshold value is adjusted in order to optimize signal quality in a step like fashion so that the step size depends on the estimated reliability (Column 5 lines 14 – 20, Column 6 lines 17 - 31).

Regarding Claim 4, Muller teaches all of the claimed limitations recited in Claims 1 or 2. Muller further teaches wherein the step-like power control commands are

signaled to the first transceiver so that the step size depends on the estimated reliability (Column 4 lines 56 – 67, Column 5 lines 33 – 35).

Regarding Claim 5, Muller teaches all of the claimed limitations recited in Claims 1 or 2. Muller further teaches wherein the desired transmission power is signaled in such a manner that the power depends on the estimated reliability (Column 4 lines 56 – 67).

Regarding Claim 6, Muller teaches all of the claimed limitations recited in Claims 1 or 2. Muller further teaches wherein an estimate concerning the bit error rate of the signal is obtained from the decoder (Column 5 lines 5 – 8).

Regarding Claim 7, Muller teaches all of the claimed limitations recited in Claims 1 or 2. Muller further teaches wherein an estimate concerning the bit error rate of the frame bits is obtained from the decoder (Column 5 lines 39 – 43).

Regarding Claim 8, Muller teaches all of the claimed limitations recited in Claims 1 or 2. Muller further teaches wherein an estimate concerning the frame error rate of the signal is obtained from the decoder (Column 5 lines 5 – 8).

Regarding Claim 9, Muller teaches all of the claimed limitations recited in Claims 1 or 2. Muller further teaches wherein signal credibility metric is obtained from the decoder (Column 4 lines 56 – 60, E sub b/I sub o also gives a measure of the signal credibility).

Regarding Claim 10, Muller teaches all of the claimed limitations recited in Claims 1 or 2. Muller further teaches wherein the step size depends on the estimated

reliability and on the reliability requirement set on the connection (Column 4 lines 56 – 67).

Regarding Claim 14, Muller teaches all of the claimed limitations recited in Claim 1 or 2. Muller further teaches wherein the values obtained in CRC calculation are used together with the reliability values in connection with the adjustment (Column 5 lines 26 – 32).

Regarding Claim 18, Muller teaches all of the claimed limitations recited in Claim 2. Muller further teaches wherein at least two reliability metric distributions are calculated, where different distributions correspond with different signal statistics at the input of the decoder (Column 5 lines 5 – 8, Column 5 lines 14 – 20, the FER and BER are also reliability metrics, the distributions of said FER and BER will inherently be different since they represent frame errors and bit errors respectively, since their distributions will be different their signal statistics will be different).

Regarding Claim 22, Muller teaches an arrangement for implementing power control on a connection between two transceivers, the arrangement comprising in the second transceiver means for receiving frame-structured signal sent from the first transceiver using the second transceiver (Column 5 lines 1 – 4, there is a measurement of the FER thus there will be a frame-structured signal), means for decoding the received signal, the means being arranged to provide a soft decision estimate concerning the reliability of the signal in the output thereof (Figure 2, Column 1 lines 66 – 67, Column 2 lines 23 – 28, Column 4 lines 56 – 60, Column 4 lines 50 – 51, the data processing and control unit decodes the signal received at the base station, the

reliability of the signal is measured in E sub b/ I sub o), means for establishing the probability of correct frames for the received signal on the basis of soft decisions provided by the decoder (Column 5 lines 5 – 8, lines 26 – 29), means for comparing the estimated probability or the parameter modeling the reliability to a particular given threshold value (Column 4 lines 56 – 67, Column 5 lines 14 – 20), means for adjusting the transmission power of the first transceiver in the second transceiver by forming and signaling power control information to the first transceiver so that the estimated probability is as close as possible to the given probability (Column 4 lines 56 – 67, Column 5 lines 14 – 20), means for adjusting the given threshold value in order to optimize signal quality (Column 5 lines 14 – 20), and means for calculating the power control information on the basis of the estimated probability (Column 4 lines 56 – 67, Column 5 lines 14 – 20).

Regarding Claim 23, Muller teaches an arrangement for implementing power control on a connection between two transceivers, the arrangement comprising in the second transceiver means for receiving frame-structured signal sent from the first transceiver using the second transceiver (Column 5 lines 1 – 4, there is a measurement of the FER thus there will be a frame-structured signal), decoding the received signal in a decoder of the second transceiver, means for decoding the received signal, the means being arranged to provide a soft decision estimate concerning the reliability of the signal in the output thereof (Figure 2, Column 1 lines 66 – 67, Column 2 lines 23 – 28, Column 4 lines 56 – 60, Column 4 lines 50 – 51, the data processing and control unit decodes the signal received at the base station, the reliability of the signal is

measured in E sub b/ I sub o), means for estimating the probability of correct frames for the received signal on the basis of soft decisions provided by the decoder (Column 5 lines 5 – 8, lines 26 – 29), means for comparing the estimated probability or the parameter modeling the probability to a particular given threshold value (Column 4 lines 56 – 67, Column 5 lines 14 – 20), means for adjusting the transmission power of the first transceiver in the second transceiver by forming and signaling power control information to the first transceiver so that the estimated probability is as close as possible to the given probability (Column 4 lines 56 – 67, Column 5 lines 14 - 20), means for generating an estimate of at least one probability measure distribution using the probability measures of several received frames, and means for calculating the power control information on the basis of the estimated probability (Column 4 lines 56 – 67, Column 5 lines 14 – 20).

Regarding Claim 24, Muller teaches all of the claimed limitations recited in Claims 22 or 23. Muller further teaches wherein the means adjust the given threshold value in order to optimize in a step like fashion so that the step size depends on the estimated reliability (Column 5 lines 14 – 20, Column 6 lines 17 - 31).

Regarding Claim 25, Muller teaches all of the claimed limitations recited in Claims 22 or 23. Muller further teaches wherein the means signal step like power control commands to the first transceiver so that the step size depends on the estimated reliability (Column 4 lines 56 – 67, Column 5 lines 33 – 35).

Regarding Claim 26, Muller teaches all of the claimed limitations recited in Claims 22 or 23. Muller further teaches wherein the means signal the desired power control so that the power depends on the estimated reliability (Column 4 lines 56 – 67).

Regarding Claim 27, Muller teaches all of the claimed limitations recited in Claims 22 or 23. Muller further teaches wherein the output of the decoding means comprise an estimate concerning the bit error rate of the frame bits (Column 5 lines 39 – 43).

Regarding Claim 28, Muller teaches all of the claimed limitations recited in Claims 22 or 23. Muller further teaches wherein the output of the decoding means comprise an estimate concerning the bit error rate of the signal (Column 5 lines 5 – 8).

Regarding Claim 29, Muller teaches all of the claimed limitations recited in Claims 22 or 23. Muller further teaches wherein the output of the decoding means comprise an estimate concerning the frame error rate of the signal (Column 5 lines 5 – 8).

Regarding Claim 30, Muller teaches all of the claimed limitations recited in Claims 22 or 23. Muller further teaches wherein the output of the decoding means comprise signal credibility metric (Column 4 lines 56 – 60, E sub b/I sub o also gives a measure of the signal credibility).

Regarding Claim 31, Muller teaches all of the claimed limitations recited in Claims 22 or 23. Muller further teaches wherein the means control the power control in such a manner that the step size depends on the estimated reliability and on the reliability requirement set on the connection. (Column 4 lines 56 – 67).

Regarding Claim 34, Muller teaches all of the claimed limitations recited in Claims 22 or 23. Muller further teaches wherein the means utilize the values obtained in CRC calculation for calculating the reliability (Column 5 lines 26 – 32).

Regarding Claim 37, Muller teaches all of the claimed limitations recited in Claims 22 or 23. Muller further teaches wherein the means control the power control in such a manner that the combination of the reliability metrics of consecutive frames should be kept at a desired level (Column 4 lines 56 – 67, the frames comprise time slots which means that there will be pilot symbols in said frames and thus several measurements of E sub b/ I sub o such that the mobile station transmit power is constantly adjusted to meet the desired level, which is the target E sub b / I sub o).

Regarding Claim 38, Muller teaches all of the claimed limitations recited in Claim 23. Muller further teaches wherein the means calculate at least two reliability metric distributions where different distributions correspond with different signal statistics at the input of the decoder (Column 5 lines 5 – 8, Column 5 lines 14 – 20, the FER and BER are also reliability metrics, the distributions of said FER and BER will inherently be different since they represent frame errors and bit errors respectively, since their distributions will be different their signal statistics will be different).

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the

> invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

5. Claims 11 and 32 are rejected under 35 U.S.C. 103(a) as being unpatentable over Muller (US 6,490,461) in view of Tong et al. (US 6,311,070).

Regarding Claim 11, Muller teaches all of the claimed limitations recited in Claims 1 or 2. Muller does not teach wherein the step size is selected from a set of possible step sizes.

Tong teaches wherein the step size is selected from a set of possible step sizes (Table 3, Column 4 lines 46 – 57).

Muller and Tong both teach a CDMA system that incorporates power control thus it would have been obvious to one of ordinary skill in the art at the time the invention was made to use the set of possible sizes taught in Tong in the CDMA system of Muller for the purpose of creating a power control system which: minimizes power overshoot, minimizes the standard deviation from the nominal power level, and maximizes uplink capacity as taught by Tong.

Regarding Claim 32, Muller teaches all of the claimed limitations recited in Claims 22 or 23. Muller does not teach wherein the means select the step size from a set of possible step sizes.

Tong teaches wherein the step size is selected from a set of possible step sizes (Table 3, Column 4 lines 46 – 57).

Muller and Tong both teach a CDMA system that incorporates power control thus it would have been obvious to one of ordinary skill in the art at the time the invention was made to use the set of possible sizes taught in Tong in the CDMA system of Muller

for the purpose of creating a power control system which: minimizes power overshoot, minimizes the standard deviation from the nominal power level, and maximizes uplink capacity as taught by Tong.

6. Claims 15 and 35 are rejected under 35 U.S.C. 103(a) as being unpatentable over Muller (US 6,490,461) in view of Mitra et al. (5,732,328).

Regarding Claim 15, Muller teaches all of the claimed limitations recited in Claims 1 or 2. Muller does not teach wherein the reliability estimates enable to search for a step size that optimizes the BER outage probability.

Mitra teaches optimizing the BER outage probability (Column 4 lines 29 – 34).

Muller and Mitra both teach a wireless system that incorporates power control thus it would have been obvious to one of ordinary skill in the art at the time the invention was made to use outage probability taught in Mitra in the wireless system of Muller for the purpose of determining a desired signal strength to be received by a base station that would likely produce signal outage intervals that are tolerable as taught by Mitra.

Regarding Claim 35, Muller teaches all of the claimed limitations recited in Claims 22 or 23. Muller does not teach wherein the means search for a step value that optimizes the BER outage probability using the reliability estimate.

Mitra teaches optimizing the BER outage probability (Column 4 lines 29 – 34).

Muller and Mitra both teach a wireless system that incorporates power control thus it would have been obvious to one of ordinary skill in the art at the time the

invention was made to use outage probability taught in Mitra in the wireless system of Muller for the purpose of determining a desired signal strength to be received by a base station that would likely produce signal outage intervals that are tolerable as taught by Mitra.

7. Claims 16 - 17 and 36 are rejected under 35 U.S.C. 103(a) as being unpatentable over Muller (US 6,490,461) in view of Denkert et al. (US 6,374,117).

Regarding Claim 16, Muller teaches all of the claimed limitations recited in Claims 1 or 2. Muller does not teach wherein the information to be sent in consecutive frames is at least partly similar.

Denkert teaches wherein the information to be sent in consecutive frames is at least partly similar (Column 6 lines 23 – 32, in a wireless system that uses ARQ there will be retransmission of data that was transmitted in the previous frame thus said data in the current frame will be similar to the data in the previous frame).

Muller and Denkert both teach a frame based wireless system that incorporates power control thus it would have been obvious to one of ordinary skill in the art at the time the invention was made to make a design preference and use the ARQ method taught in Denkert in the wireless system of Muller as an alternative means for handling erroneously received information as taught by Denkert.

Regarding Claim 17, Muller in view of Denkert teaches all of the claimed limitations recited in Claim 16. Muller further teaches wherein the combination of the reliability metrics of consecutive frames should be kept at a desired level (Column 4

lines 56 – 67, the frames comprise time slots which means that there will be pilot symbols in said frames and thus several measurements of E sub b/ I sub o such that the mobile station transmit power is constantly adjusted to meet the desired level, which is the target E sub b / I sub o).

Regarding Claim 36, Muller teaches all of the claimed limitations recited in Claims 22 or 23. Muller does not teach wherein the means receive frame-structured signal sent from the first transceiver where the information in the consecutive frames is at least partly similar.

Denkert teaches where the information in consecutive frames is at least partly similar (Column 6 lines 23 – 32, in a wireless system that uses ARQ there will be retransmission of data that was transmitted in the previous frame thus said data in the current frame will be similar to the data in the previous frame).

Muller and Denkert both teach a frame based wireless system that incorporates power control thus it would have been obvious to one of ordinary skill in the art at the time the invention was made to make a design preference and use the ARQ method taught in Denkert in the wireless system of Muller as an alternative means for handling erroneously received information as taught by Denkert.

8. Claims 19 – 20 and 39 – 40 are rejected under 35 U.S.C. 103(a) as being unpatentable over Muller (US 6,490,461) in view of Shah (6,167,259).

Regarding Claim 19, Muller teaches all of the claimed limitations recited in Claim 2. Muller does not teach wherein a non-parametric estimator is used for generating a reliability measure distribution.

Shah teaches a non-parametric estimator (Column 8 lines 19 – 27).

Muller and Shah both teach a wireless system comprising forward and reverse links thus it would have been obvious to one of ordinary skill in the art at the time the invention was made to use the non-parametric estimation taught in Shah in the wireless system of Muller for the purpose of analyzing the BER on the forward and reverse links to quantify the degree of balance of said links.

Regarding Claim 20, Muller teaches all of the claimed limitations recited in Claim 2. Muller does not teach wherein a parametric estimator is used for generating a reliability measure distribution.

Shah teaches a parametric estimator (Column 8 lines 19 – 27, the non-parametric estimator is used when the data distribution is not normal thus a parametric estimator will be used when said data distribution is normal).

Muller and Shah both teach a wireless system comprising forward and reverse links thus it would have been obvious to one of ordinary skill in the art at the time the invention was made to use the parametric estimation taught in Shah in the wireless system of Muller for the purpose of analyzing the BER on the forward and reverse links to quantify the degree of balance of said links.

Regarding Claim 39, Muller teaches all of the claimed limitations recited in Claim 23. Muller does not teach wherein the means use a non-parametric estimator for generating the reliability measure distribution.

Shah teaches a non-parametric estimator (Column 8 lines 19 – 27).

Muller and Shah both teach a wireless system comprising forward and reverse links thus it would have been obvious to one of ordinary skill in the art at the time the invention was made to use the non-parametric estimation taught in Shah in the wireless system of Muller for the purpose of analyzing the BER on the forward and reverse links to quantify the degree of balance of said links.

Regarding Claim 40, Muller teaches all of the claimed limitations recited in Claim 23. Muller does not teach wherein the means use a parametric estimator for generating the reliability measure distribution.

Shah teaches a parametric estimator (Column 8 lines 19 – 27, the non-parametric estimator is used when the data distribution is not normal thus a parametric estimator will be used when said data distribution is normal).

Muller and Shah both teach a wireless system comprising forward and reverse links thus it would have been obvious to one of ordinary skill in the art at the time the invention was made to use the parametric estimation taught in Shah in the wireless system of Muller for the purpose of analyzing the BER on the forward and reverse links to quantify the degree of balance of said links.

9. Claims 21 and 41 are rejected under 35 U.S.C. 103(a) as being unpatentable over Muller (US 6,490,461) in view of Gatherer et al. (US 2002/0115463).

Regarding Claim 21, Muller teaches all of the claimed limitations recited in Claims 1 or 2. Muller does not teach wherein the reliability estimate depends on the a posteriori probabilities or likelihood values of the information bits obtained from the output of the decoder.

Gatherer teaches a posteriori probabilities of information bits (Section 0015 lines 5 – 10).

Muller and Gatherer both teach a wireless system incorporates coding thus it would have been obvious to one of ordinary skill in the art at the time the invention was made to use the a posteriori probabilities taught in Gatherer in the wireless system of Muller for the purpose of producing an improved estimate of the received symbols as taught by Gatherer.

Regarding Claim 41, Muller teaches all of the claimed limitations recited in Claim 22 or 23. Muller does not teach wherein the means calculate a reliability estimator in such a manner that it depends on the a posteriori probabilities or likelihood values of the information bits to be obtained from the output of the decoder.

Gatherer teaches a posteriori probabilities of information bits (Section 0015 lines 5 – 10).

Muller and Gatherer both teach a wireless system incorporates coding thus it would have been obvious to one of ordinary skill in the art at the time the invention was made to use the a posteriori probabilities taught in Gatherer in the wireless system of

Muller for the purpose of producing an improved estimate of the received symbols as taught by Gatherer.

Conclusion

10. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Raymond S Dean whose telephone number is 703-305-8998. The examiner can normally be reached on 7:00-3:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nay A Maung can be reached on 703-308-7745. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Raymond S. Dean
April 1, 2005

NICK CORSARO
PRIMARY EXAMINER